



ORIGINAL ARTICLE

Renal denervation in patients with resistant hypertension: Six-month results[☆]



Hélder Dores^{a,*}, Manuel de Sousa Almeida^{a,d}, Pedro de Araújo Gonçalves^{a,d},
Patrícia Branco^b, Augusta Gaspar^b, Henrique Sousa^b, Angela Canha Gomes^c,
Maria João Andrade^a, Maria Salomé Carvalho^a, Rui Campante Teles^{a,d},
Luís Raposo^{a,d}, Henrique Mesquita Gabriel^{a,d}, Francisco Pereira Machado^d,
Miguel Mendes^a

^a Serviço de Cardiologia, Hospital de Santa Cruz, CHLO, Lisboa, Portugal

^b Serviço de Nefrologia, Hospital de Santa Cruz, CHLO, Lisboa, Portugal

^c Serviço de Anestesiologia, Hospital de Santa Cruz, CHLO, Lisboa, Portugal

^d Centro Cardiovascular, Hospital da Luz, Lisboa, Portugal

Received 19 July 2013; accepted 27 September 2013

Available online 21 May 2014

KEYWORDS

Resistant hypertension;
Renal denervation;
Left ventricular hypertrophy

Abstract

Introduction: Increased activation of the sympathetic nervous system plays a central role in the pathophysiology of hypertension (HTN). Catheter-based renal denervation (RDN) was recently developed for the treatment of resistant HTN.

Aim: To assess the safety and efficacy of RDN for blood pressure (BP) reduction at six months in patients with resistant HTN.

Methods: In this prospective registry of patients with essential resistant HTN who underwent RDN between July 2011 and May 2013, the efficacy of RDN was defined as ≥ 10 mmHg reduction in office systolic blood pressure (SBP) six months after the intervention.

Results: In a resistant HTN outpatient clinic, 177 consecutive patients were evaluated, of whom 34 underwent RDN (age 62.7 ± 7.6 years; 50.0% male). There were no vascular complications, either at the access site or in the renal arteries. Of the 22 patients with complete six-month follow-up, the response rate was 81.8% ($n=18$). The mean office SBP reduction was 22 mmHg (174 ± 23 vs. 152 ± 22 mmHg; $p < 0.001$) and 9 mmHg in diastolic BP (89 ± 16 vs. 80 ± 11 mmHg; $p = 0.006$). The number of antihypertensive drugs (5.5 ± 1.0 vs. 4.6 ± 1.1 ; $p = 0.010$) and pharmacological classes (5.4 ± 0.7 vs. 4.6 ± 1.1 ; $p = 0.009$) also decreased significantly. Of the 24-hour ambulatory BP monitoring and echocardiographic parameters analyzed, there were significant reductions in diastolic load (45 ± 29 vs. $27 \pm 26\%$; $p = 0.049$) and in left ventricular mass index (174 ± 56 vs. 158 ± 60 g/m²; $p = 0.014$).

[☆] Please cite this article as: Dores H, de Sousa Almeida M, de Araújo Gonçalves P, Branco P, Gaspar A, Sousa H, et al. Desnervação renal em doentes com hipertensão arterial resistente: resultados aos seis meses de seguimento. Rev Port Cardiol. 2014;33:197–204.

* Corresponding author.

E-mail address: heldores@hotmail.com (H. Dores).

PALAVRAS-CHAVE

Hipertensão arterial resistente;
Desnervação renal;
Hipertrofia ventricular esquerda

Conclusion: In this cohort of patients with resistant HTN, RDN was safe and effective, with a significant BP reduction at six-month follow-up.

© 2013 Sociedade Portuguesa de Cardiologia. Published by Elsevier España, S.L. All rights reserved.

Desnervação renal em doentes com hipertensão arterial resistente: resultados aos seis meses de seguimento

Resumo

Introdução: O aumento da atividade do sistema nervoso simpático desempenha um papel preponderante na fisiopatologia da hipertensão arterial (HTA). Recentemente foi desenvolvida uma técnica de intervenção percutânea – a desnervação renal (DNR) – para o tratamento da HTA resistente.

Objetivo: Avaliar a segurança imediata e a eficácia da DNR aos seis meses na redução da pressão arterial em doentes com HTA resistente.

Métodos: Registo prospetivo de doentes com HTA essencial resistente submetidos a DNR entre julho de 2011 e maio de 2013. A eficácia da DNR foi definida pela redução ≥ 10 mmHg da pressão arterial sistólica (PAS), avaliada na consulta dos seis meses de seguimento.

Resultados: Numa consulta de HTA resistente avaliaram-se 177 doentes consecutivos, dos quais 34 (idade $62,7 \pm 7,6$ anos; 50,0% homens) efetuaram DNR. Não ocorreram complicações vasculares, nomeadamente no acesso ou nas artérias renais. Nos 22 doentes com seguimento completo aos seis meses, a taxa de respondedores foi 81,8% ($n=18$). A PAS na consulta diminuiu em média 22 mmHg (174 ± 23 versus 152 ± 22 mmHg; $p < 0,001$) e a diastólica 9 mmHg (89 ± 16 versus 80 ± 11 mmHg; $p = 0,006$). O número de fármacos anti-hipertensores ($5,5 \pm 1,0$ versus $4,6 \pm 1,1$; $p = 0,010$) e de classes farmacológicas ($5,4 \pm 0,7$ versus $4,6 \pm 1,1$; $p = 0,009$) também diminuíram significativamente. Dos parâmetros da monitorização ambulatória da pressão arterial de 24 h e ecocardiográficos analisados, a percentagem de cargas diastólicas (45 ± 29 versus $27 \pm 26\%$; $p = 0,049$) e o índice de massa ventricular esquerda (174 ± 56 versus 158 ± 60 g/m²; $p = 0,014$) diminuíram significativamente.

Conclusão: Na população estudada de doentes com HTA resistente submetidos a DNR, esta foi uma intervenção segura e eficaz na redução da pressão arterial aos seis meses de seguimento.

© 2013 Sociedade Portuguesa de Cardiologia. Publicado por Elsevier España, S.L. Todos os direitos reservados.

Introduction

Hypertension (HTN) is one of the main independent risk factors for global mortality.¹ Its high prevalence and increasing incidence, including among young adults, are a major public health concern.²

Despite the many approved and recommended therapeutic options, the rate of control of HTN is far from ideal.³ This was demonstrated by the PAP study on the prevalence, awareness, treatment and control of HTN in Portugal,⁴ which showed not only a high prevalence of HTN in individuals aged 18 and over (42.1%) but also a low rate of control (11.2%). Although various factors contribute to poor control, in a significant number of cases HTN is resistant to drug therapy and it is therefore essential to identify such patients given their high risk of cardiovascular events.^{5–7} The limitations of current drug therapies probably reflect the complex pathophysiological mechanisms involved in the development and persistence of HTN.^{8,9} Chronic activation of the sympathetic nervous system is an important mechanism in resistant HTN, and so a new interventional technique – renal denervation (RDN) – has been developed, consisting of endovascular application of radiofrequency energy in the renal arteries to modulate renal sympathetic activity.^{10,11}

The safety and efficacy of RDN were first documented in the Symplicity HTN-1¹¹ and Symplicity HTN-2 trials,¹² and there is evidence that similar levels of blood pressure (BP) reduction are maintained in the medium term.^{13,14} We recently published our initial experience with this technique to treat patients with resistant HTN.¹⁵

The aim of this study was to assess the safety and efficacy of RDN for BP reduction at six months in patients with resistant HTN.

Methods**Study design and population**

In this prospective registry of 177 consecutive patients evaluated in the resistant HTN outpatient clinic of a tertiary center between July 2011 and May 2013, resistant HTN was defined as office BP of $\geq 140/90$ mmHg despite therapy with at least three antihypertensive drugs (including a diuretic) at maximum tolerated doses.¹⁶ Possible secondary causes of HTN were excluded in all patients. Patients were selected for RDN in joint meetings between the cardiologists and nephrologists responsible for patient assessment

Download English Version:

<https://daneshyari.com/en/article/3020212>

Download Persian Version:

<https://daneshyari.com/article/3020212>

[Daneshyari.com](https://daneshyari.com)